UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,677	01/11/2005	Yoshihito Yaginuma	1830.1003	9266

21171 7590 06/01/2009

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
WHITE, EVERETT NMN	

ART UNIT	PAPER NUMBER
1623	

MAIL DATE	DELIVERY MODE
06/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,677	YAGINUMA ET AL.	
	Examiner	Art Unit	
	EVERETT WHITE	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,16 and 18-25* is/are pending in the application.

4a) Of the above claim(s) *21 and 24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,16,18-20,22,23 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/23/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed March 23, 2009 has been received, entered and carefully considered. The amendment affects the instant application accordingly:

(A) Claims 4-15 and 17 have been canceled;
(B) Claims 1 and 18 have been amended;
(C) Comments regarding Office Action have been provided drawn to:
  (I) 112, 2nd paragraph rejection, which has been withdrawn;
  (II) 103(a) rejection, which has been withdrawn in-part.

2. Claims 1-3, 16 and 18-25 are pending in the case; Claims 21 and 24 are withdrawn from consideration.

Foreign Priority Claimed

3. This application is a 371 of PCT/JP03/08793 International Filing Date: July 10, 2003 published in Japanese, which claims foreign priority to Japan 2002-204740 under 35 U.S.C. 119(a)-(d). It is noted that PCT/JP03/08793 and Japan 2002-204740 (July 12, 2002) are in Japanese, no translation into English.

Claim Rejections - 35 USC § 103

New Ground of Rejection

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 3, 16, 18-20, 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turbak et al (US Patent No. 4,483,743) or Battista (US Patent No. 3,146,168) in view of Koch et al (WO 99/02568) or Bunick et al (US Patent No. 4,714,620).

Applicants claim a water-dispersible cellulose, the water dispersible cellulose being derived from a plant cell wall having starting cellulosic substance, wherein the starting cellulosic substance has an α-cellulose content of 60-90% by weight and an average degree of polymerization of 400-1300, or the starting cellulosic substance has α-cellulose content of 60-100% by weight and an average degree of polymerization of greater than 1300, the water dispersible cellulose being crystalline having a crystallinity of 55% or more, and fine fibrous, and the water-dispersible cellulose comprising 30% by weight or more of a component stably suspensible in water, wherein the component comprises a fibrous cellulose having a length (major axis) of 0.5-30 μm and a width (minor axis) of 2-600 nm, and a length/width ratio (major axis/minor axis) of 20-400, and the water-dispersible cellulose having a loss tangent of less than 1, when made into a 0.5% by weight aqueous dispersion.

The Turbak et al patent discloses substantially stable suspensions of microfibrillated cellulose (see abstract) and teaches that substantially stable suspension can be define as a suspension in water which upon dilution to 0.5% and upon standing for one hour, maintains at least 60% of its original volume, i.e. contains no more than 40% of clear liquid (see column 3, lines 28-32). The microfibrillated cellulose of the

Turbak et al patent meets the stably suspensible in water requirement of the instant claims.

The Battista patent, which discloses cellulose crystallite aggregates from wood pulp having 93% alpha cellulose (see column 2, lines 54 to 56). See column 3, lines 28-30 of the Battista patent wherein it is indicated that the aggregates thereof provide stable dispersions. Also see the first paragraph of column 3 of the Battista patent wherein the aggregates may be disintegrated to form products having a particle size less than one micron to about 300 microns, which suggests a microfibrillated cellulose product. The microfibrillated cellulose of the Battista patent meet the alpha cellulose requirement recited in the instant claims.

The instantly claimed water-dispersible cellulose differs from the cellulose products of the Turbak et al and Battista patents by also claiming a crystallinity of 55% or more and an average degree of polymerization greater than 1,300 for the cellulose thereof and a specific length, width and length/width ratio for the fibrous cellulose component of the claimed water-dispersible cellulose.

The Koch WO publication shows that cellulose having the instantly claimed crystallinity and degree of polymerization is known in the art by disclosing a cellulose compound having crystallinity greater than 80% with a degree of polymerization of approximately 1500 (see abstract).

The Bunick et al patent discloses food grade cellulose, which comprises fibers having a width from about 0.005 to 0.35 mm, and a length from about 0.001 to 4 mm (see column 5, lines 47-49). These measurements for the fibrous cellulose of the Bunick et al patent covers part of the instantly claimed fibrous cellulose length and can be calculated to cover the instantly claimed length/width ratio.

One of ordinary skill in this art would be motivated combine the teaching of the Turbak et al and Battista patents with the teaching of the Koch WO publication and Bunick et al patent since each of the documents disclose industrial applications for cellulose products.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cellulose of suspension stability in water of the

Turbak et al patent or having 93% alpha cellulose of the Battista patent with a cellulose compound of crystallinity greater than 55% or having a specific fibrous cellulose length and width in view of the recognition in the art, as evidenced by the Koch publication or Bunick et al patent that such properties of cellulose products increases the effectiveness of the cellulose for various industrial applications.

6. Applicant's arguments with respect to Claims 1, 3, 16, 18-20, 22 and 25 have been considered but are moot in view of the new ground(s) of rejection.

New Ground of Rejection

7. Claims 2 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turbak et al (US Patent No. 4,483,743) or Battista (US Patent No. 3,146,168) in view of Koch et al (WO 99/02568) or Bunick et al (US Patent No. 4,714,620) as applied to Claims 1, 3, 16, 18-20, 22 and 25 above, and further in view of Kajita et al (JP Publication No. 58013713 A).

Applicants claim the water-dispersible cellulose of Claim 1 having a loss tangent of less than 0.6, when made into a 0.5% by weight aqueous dispersion.

The information discussed in the above rejection in regard to the Turbak et al or Battista patents in view of the Koch et al publication or Bunick et al patent is incorporated into the current rejection, which is not repeated herein. These references do not discussed the loss tangent of the cellulose product as instantly claimed in Claims 2 and 23.

The Kajita et al publication discloses fiber manufactured from cellulose derivative solutions in a liquid crystal state, which suggests fibrous cellulose comprising crystalline components as instantly claimed. Kajita et al discloses that the cellulose derivative solution thereof comprises a mechanical loss tangent of 0.06, which is within the range of the loss tangent disclosed in the instant Claims 2 and 23 of being less than 0.6.

One of ordinary skill in this art would be motivated combine the teaching of the Turbak et al or Battista patents in view of the Koch WO publication or Bunick et al patent with the Kajita et al publication since each of the documents disclose industrial applications for cellulose products.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cellulose of the Turbak et al or Battista patent in view of the Koch publication or Bunick et al patent with a cellulose compound having a loss tangent of less than 0.6 in view of the recognition in the art, as evidenced by the Kajita et al publication that such properties of cellulose products increases the dispersible stability of the product when formed into a suspension.

8. Applicant's arguments with respect to Claims 2 and 23 have been considered but are moot in view of the new ground(s) of rejection.

9. Claims 18-20, 22, 23 and 25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Dinand et al (US Patent No. 5,964,983) in view of Turbak et al (US Patent No. 4,483,743) or Battista (US Patent No. 3,146,168) or Kajita et al (JP Pub. No. 58013713 A) for the reasons disclosed on pages 3-6 of the Office Action filed December 23, 2008.

10. Applicant's arguments filed March 23, 2009 have been fully considered but they are not persuasive. Applicants amended independent Claim 18 by reciting sources which the cellulose is not derived from. This amendment to Claim 18 does not over come the rejection since the claims are drawn to a cellulose product and the differences between cellulose derived from other sources that are not recited in instant Claim 18 have not been explained. Generally, cellulose compounds, per se, no matter where the compounds are derived from, are the same. Accordingly, the rejection of Claims 18-20, 22, 23 and 25 is maintained for the reason of record.

Reply to Final Must Include Cancellation of Claims Non-elected with Traverse

11. This application contains Claims 21 and 24 drawn to an invention nonelected with traverse in the reply filed on October 15, 2007. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Summary

12. Claims 1-3, 16, 18-20, 22, 23 and 25 are rejected; Claims 21 and 24 are withdrawn from consideration.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Examiner's Telephone Number, Fax Number, and Other Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is 571-272-0660. The examiner can normally be reached on 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Everett White/
Examiner, Art Unit 1623

/Shaojia Anna Jiang/
Supervisory Patent Examiner, Art Unit 1623